



Legislative Audit Division

State of Montana

Report to the Legislature

July 2007

Performance Audit

Promoting Proper Forest Practices

Forestry Assistance Bureau

Department of Natural Resources and Conservation (DNRC)

Forest practices generally refer to activities related to timber sales. It is important to ensure forest practices are conducted in ways to protect forest resources. This audit report discusses DNRC's efforts to promote proper forest practices. Topics discussed include:

- ▶ Forest practices generally rely upon voluntary compliance with forestry best management practices (BMP).
- ▶ DNRC's forest practices controls are comprised of partnerships, education, and BMP audits.
- ▶ DNRC's process for promoting proper forest practices near water achieves similar results as states with more regulatory-based requirements.
- ▶ To further strengthen BMP audits, DNRC and the BMP Technical Working Group should expand BMP audit selection criteria.

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July 2007

The Legislative Audit Committee
of the Montana State Legislature:

This is our performance audit of the Department of Natural Resources and Conservation's (DNRC) efforts to promote proper forest practices in Montana. Forest practices generally refer to activities related to timber sales. Our audit found DNRC has controls in place and a process to audit the use of forestry best management practices (BMP). This report makes a recommendation on how DNRC could strengthen its BMP audit process.

We wish to express our appreciation to the management and staff of DNRC and forest practices stakeholders for their cooperation and assistance during the audit. The department's response to this report is included at the end of the report.

Respectfully submitted,

/s/ Scott A. Seacat

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Legislative Auditor

Legislative Audit Division

Performance Audit

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Members of the audit staff involved in this audit were Steve Erb,
Joe Murray, and Misty Wallace.

Table of Contents

List of Figures and Tables	iii
Appointed and Administrative Officials	iv
Chapter I – Introduction	1
Introduction.....	1
Audit Objectives	1
Audit Scope and Methodology	1
Issue for Further Study	2
Report Organization.....	3
Chapter II – Montana's Forest Practices Regulatory Framework.....	5
Introduction.....	5
Existing Statute Encourages Voluntary Best Management Practices	5
Fire Hazard Reduction Law.....	6
BMP Notification Law	6
Stream Management Zone Law.....	7
Chapter III – Forest Practices Components.....	9
Introduction.....	9
Conclusion: Partnerships and Education Have Enhanced the Implementation of Sound Forest Practices	9
Conclusion: On-site Inspections of Forest Practices and Landowner Consultations Help Compliance With BMPs.	10
Conclusion: BMP Audits are an Essential Component for DNRC to Evaluate if Forest Practices were Conducted Responsibly.....	11
Conclusion: Voluntary BMPs are Used a High Percentage of Time Near Water	12
Use of BMPs to Protect Water is Part of Forest Practices Culture	13
How Do Montana's Forest Practices Compare with Other States?	14
Do States with Specific Forest Practices Laws and Regulations Have Better Forest Practices Track Records in Protecting Water Resources?.....	14
Conclusion: Montana's Administration of Forest Practices Achieves Similar Results In Protecting Water Resources	15
Chapter IV –Strengthening the BMP Audit Process	17
Introduction.....	17
BMP Audits Mainly Focus on Forest Practices Near Streams	17
Current Process Does Not Include All High-Risk Factors in DNRC's BMP Audit Selection Pool	18
Potential High-Risk Sites Not Considered for BMP Audits.....	18
BMP Audit Selection Criteria Should Be Expanded	21
Some Forest Practices Not Targeted with Current Process	21

Table of Contents

Changing Conditions Dictate Need For New Selection Criteria.....	22
BMP Audit Selection Criteria should be Expanded	22
Appendix A – Administration and Evolution of Forest Practices in Montana	A-1
The Department of Natural Resources and Conservation.....	A-1
Forestry Assistance Bureau Administers the Forest Practices Program	A-1
Forest Practices Funding and FTE	A-2
The Clean Water Act Changed Forest Practices	A-4
House Joint Resolution 49 Studies Led to Montana’s Current Forest Practices Framework	A-5

List of Figures and Tables

Figure

<u>Figure 1</u>	Example of Improper Forest Practices	20
-----------------	--	----

Table

<u>Table 1</u>	Application and Effectiveness of BMPs	13
<u>Table 2</u>	Forest Practices Funding	A-3

Appointed and Administrative Officials

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Promoting Proper Forest Practices

A system exists to promote proper forest practices in Montana and protect water resources. This system could be enhanced by auditing forestry best management practices on a broader spectrum of timber harvest sites.

Audit Findings

The term forest practices generally refer to activities related to timber harvest. Montana's current forest practices regulatory framework consists of both mandatory requirements and voluntary applications. The majority of on-the-ground forest practices activities, such as road design and building, timber harvest operations, and stream crossings are administered using voluntary forestry best management practices (BMPs). In response to a 1987 amendment to the federal Clean Water Act, voluntary BMPs were developed in Montana as a primary tool to protect water resources from non-point sources of pollution during forest practices activities.

Audit work found Montana's system to promote proper forest practices consists of three main components. These include:

- ▶ Partnerships and education to enhance implementation of sound forest practices.
- ▶ On-site inspections of forest practices activities and landowner consultations to improve compliance with BMPs.
- ▶ Biennial BMP audits which are an essential component for the Department of Natural Resources and Conservation (DNRC) to evaluate if forest practices were conducted responsibly.

We compared Montana's track record for protecting forest water resources to states with higher levels of statutory requirements related to forest practices. Our review found Montana's process, which relies heavily on voluntary BMPs, appears to achieve similar results in protecting water resources as states with a more regulation-oriented structure. Using BMPs to protect water resources has become part of the culture of conducting forest practices in Montana.

DNRC uses site selection criteria to randomly select 40 to 45 "high-risk" timber harvest sites for biennial BMP audits. To be considered high-risk, any portion of a timber sale must be located within 200 feet of a stream or other water source. The current selection criteria limits other high-risk sites from being considered for a BMP audit. In one example, a road constructed for a timber sale had over 100 stream crossings but the timber harvest did not qualify to be selected because the actual harvest site was not within 200 feet of water. Audit documentation demonstrated road surface drainage, culvert installation, and other stream crossings have the highest departures from BMPs and are the highest potential sources of non-point water pollution. The current BMP audit selection criteria of focusing on timber harvests conducted near water have been used since 1989. While an important component of the process, it does not consider several other high-risk factors such as road construction, topography, soil type, logging method, etc. Timber industry representatives indicated different selection criteria should be used to provide a broader perspective of forest practices activities - not just those where a harvest was conducted within 200 feet of a water source.

Audit Recommendations

DNRC, in conjunction with the BMP Technical Working Group, should expand BMP audit selection criteria prior to the 2008 BMP audit cycle to audit/monitor a broader spectrum of timber harvest sites.

Chapter I – Introduction

Introduction

Montana's forests are important because they are the headwaters for several major river basins used for irrigation and livestock, domestic and industrial purposes, and a variety of recreational activities. Montana's 22.5 million acres of forested land also contribute to one of the state's major industries-timber. Forest practices are activities resulting in the harvest of trees, road construction and reconstruction associated with the tree harvest, site preparation for tree stand regeneration, and management of slash from timber harvest operations. A portion of the Department of Natural Resources and Conservation's (DNRC) mission is to ensure sustainability of Montana's forests through sound forest management practices. This responsibility includes ensuring forest practices are conducted in ways to protect soil, water, and other forest resources. At the request of the Legislative Audit Committee, a performance audit was conducted of DNRC's process to promote proper forest practices in Montana.

Audit Objectives

The objectives of our audit were to:

1. Determine DNRC's role in promoting proper forest practices in Montana.
2. Evaluate how DNRC provides for the protection of soil, water and other forest resources during forest practices activities.
3. Determine if Montana's voluntary system for regulating forest practices is comparable to states with more regulatory requirements.

Audit Scope and Methodology

The scope of this audit evaluated DNRC's role in encouraging proper forest practices on State Trust Lands, federal lands, private industrial forest lands, and non-industrial private forest (NIPF) lands. To address our audit objectives, we completed the following work:

- ▶ Reviewed laws, administrative rules, and forestry best management practices (BMPs).
- ▶ Reviewed House Joint Resolution (HJR) 49 passed by the 1987 Legislature. HJR 49 was the springboard for Montana's current forest practices regulatory structure.

Chapter I – Introduction

- ▶ Interviewed officials from the Montana Environmental Quality Council regarding administration of forest practices in Montana.
- ▶ Reviewed strategic goals for DNRC's Forestry Assistance Bureau related to forest practices and forest stewardship.
- ▶ Reviewed DNRC funding and FTE related to forest practices administration.
- ▶ Reviewed results of DNRC's BMP audits of forest practices since 1990.
- ▶ Observed BMP Technical Working Group meetings and reviewed meeting minutes dating back to 2005.
- ▶ Interviewed DNRC management and staff regarding the department's administrative responsibilities for forest practices.
- ▶ Accompanied statewide BMP audit teams (northwest Montana, western Montana, and eastern Montana) to observe procedures followed during BMP audits. A total of ten audits were observed on federal land, state land, private industrial forest land, and NIPF land.
- ▶ Interviewed BMP audit team members and team leaders regarding the BMP audit process, forest practices activities, and followed-up on questions developed during BMP audit observations.
- ▶ Reviewed data from DNRC's hazard reduction database to obtain information related to forest practices and on-site inspections for fiscal years 2004 through 2006. We also reviewed a judgmental sample of Hazard Reduction Agreements for timber harvests occurring during calendar years 2003, 2004, and 2005.
- ▶ Interviewed timber industry officials, federal land management officials, and a conservation group representative regarding forest practices.
- ▶ Obtained information from Washington State Department of Natural Resources and Idaho Department of Lands regarding forest practices in those states. This information provided us with a basis for which to compare and evaluate the effectiveness of DNRC's Forest Practices Program.

Issue for Further Study

Forestry BMPs were created to help protect water quality from non-point sources of pollution during forest practices activities. Non-point sources of pollution are impurities (sediment, chemicals, etc.) entering water sources at several different points as opposed to having a single source. Audit work noted other activities in the state,

such as subdivisions, state and county road maintenance, and grazing/agricultural activities can also potentially impact water quality via non-point sources of pollution. Audit documentation noted these activities are generally not subject to similar protections or guidelines as forest practices activities. A performance audit could evaluate potential impacts these activities have on water quality and if the state could benefit through BMPs or other protective measures over these activities.

Report Organization

The remainder of this report provides information to answer our audit objectives. Chapter II discusses Montana’s regulatory framework for forest practices. Chapter III makes a number of conclusions related to DNRC’s controls over forest practices. Chapter IV discusses a change DNRC could make in the current forest practices control structure to further strengthen its process. Appendix A illustrates DNRC’s organizational structure for overseeing forest practices and provides a historical perspective on development of the current forest practices regulatory structure.

Chapter II – Montana’s Forest Practices Regulatory Framework

Introduction

The term “forest practices” generally refers to activities related to timber sales (i.e. logging). Section 76-13-102, MCA, defines forest practices as “the harvesting of trees, road construction or reconstruction associated with harvesting and accessing trees, site preparation for regeneration of a timber stand, reforestation, and the management of logging slash.” If not done properly, forest practices can increase risks to human safety and property and also damage forest resources. For example, logging slash from timber harvests can increase wildfire risks, and road construction or timber harvesting activities, if not done properly, can cause soil erosion or degrade water quality. This chapter discusses Montana’s regulatory framework for forest practices activities.

Existing Statute Encourages Voluntary Best Management Practices

Montana’s forest practices regulatory framework consists of both mandatory requirements and voluntary applications. For example, section 76-13-101, MCA, “encourages the use of” best management practices (BMP) but does not require they be applied during forest practices. Other statutes dictate certain requirements be followed during forest practices, such as when logging slash should be removed and prohibiting certain practices near streams or other bodies of water.

Section 76-13-104, MCA, designates the Department of Natural Resources and Conservation’s (DNRC) role in protecting forest resources as primarily one of giving technical advice concerning forest, water, and soil conservation. This role includes DNRC facilitating cooperation between all public and private entities engaged in forest practices and administering laws related to forest practices. Three laws directly relate to forest practices. These include the Fire Hazard Reduction Law, the BMP Notification Law, and the Streamside Management Zone (SMZ) law. Most of DNRC’s authority for administering these laws is for state trust land and private land, but in some cases DNRC has limited authority to administer forest practices on federal land. The following sections briefly describe each of these laws.

Chapter II – Montana’s Forest Practices Regulatory Framework

Fire Hazard Reduction Law

The Fire Hazard Reduction Law (Slash Law), Title 76, Chapter 13, Part 4, MCA, was enacted to reduce wildfire risk caused by untreated slash and debris caused by logging operations. Any party planning to conduct forest practices on private land must enter into a Hazard Reduction Agreement (HRA) with DNRC and post a performance bond which is refunded upon completion of proper cleanup of slash from the operation. The amount of the bond posted is \$6 per 1,000 board feet. A portion of this fee pays DNRC’s costs to administer forest practices and helps fund a portion of operating costs for Montana State University’s Extension Forestry Program. HRAs are not required on state and federal timber sales since these sales are administered by a public entity.

The HRA application requests information on acreage to be harvested, slash treatment methods, site conditions (such as steepness of slope and proximity to structures), proximity of the harvest area to streams and other bodies of water, and if roads will be constructed. An HRA also requires applicants to specify how slash will be removed and establishes a timeline for completing slash disposal. DNRC Service Foresters use information from the HRA to help prioritize inspections of forest practices activities. HRA applicants are issued a hazard reduction number upon application approval.

BMP Notification Law

Title 76, Chapter 13, Part 1, MCA, is known as the BMP Notification Law. To achieve conservation of forest and watershed resources, this law encourages the use of BMPs during forest practices on private land. BMPs are general guidelines outlining the best methods for conducting forest practices to prevent problems such as soil erosion and water pollution. With the exception of streams meeting “310 permit” requirements, most on-the-ground forest practices such as road construction, timber harvest operations (log skidding, etc.), and stream crossings are regulated using voluntary BMPs. This law requires land owners notify DNRC of their intent to conduct forest practices on private forest land, and once notified, DNRC must provide information on BMPs to both landowners and individuals hired to conduct forest practices. Both

Chapter II – Montana’s Forest Practices Regulatory Framework

federal and state land management agencies have adopted BMPs for their forest practices operations.

Stream Management Zone Law

A Streamside Management Zone (SMZ) is a buffer strip of land (generally 50 feet wide) adjacent to streams, lakes and other bodies of water and plays an important part in protecting stream and water quality. The SMZ Law (Title 77, Chapter 5, Part 3, MCA), established in 1991, regulates forest practices associated with timber sales taking place along these bodies of water. The purpose of this law is to protect the “quality and quantity” of forest waters, and conserve the integrity of Montana’s SMZs, while allowing operators the flexibility to conduct forest practices within the SMZ. Section 77-5-303, MCA, prohibits seven types of activities from occurring within an SMZ. These include:

- ▶ Broadcast burning (to reduce forest fuels or logging slash)
- ▶ Operating wheeled or tracked vehicles except on established roads
- ▶ Clearcutting
- ▶ Construction of roads except when necessary to cross a stream or wetland
- ▶ Improper handling, storage, or disposal of hazardous or toxic substances
- ▶ Side-casting of road material into water bodies
- ▶ Deposit of logging slash in water bodies

Timber harvesting is allowed within the SMZ; however, administrative rules outline specific actions that must be followed in order to protect the SMZ. For example, administrative rules specify how many trees must be retained and generally prohibits the use of equipment in the SMZ (with some exceptions). This law gives DNRC authority to inspect forest practice activities on any federal, state or private land to assess compliance with SMZ requirements. If violations are identified, DNRC may issue either a warning or assess a penalty of up to \$1,000 per day, per violation. In either case, the department will require rehabilitation of an SMZ damaged during forest practices.

Chapter III – Forest Practices Components

Introduction

This chapter addresses our three audit objectives. Based on audit work, a system to promote proper forest practices exists in Montana. Appendix A describes in detail how current forest practices components evolved in Montana. This system consists of three main components related to forest practices activities: partnerships and education, on-site inspections, and best management practices (BMP) audits of timber harvest sites. Each of these components is described below.

Conclusion: Partnerships and Education Have Enhanced the Implementation of Sound Forest Practices

Audit observations found the Department of Natural Resources and Conservation (DNRC) has partnerships with several stakeholders involved with forest practices in Montana. Stakeholders include representatives from the timber industry, non-industrial private forest (NIPF) owners, federal management agencies, Montana's universities, and the environmental and conservation community. Interviews with representatives from these various groups indicates these partnerships are an integral part of DNRC's process to promote proper forest practices, especially since many aspects of forest practices are based on voluntary standards. Interviews with stakeholders and DNRC officials suggest these partnerships help develop good working relationships between them and a more consistent understanding of what is expected when forest practices are conducted. Audit observations of interactions between these various groups support these statements.

These partnerships also resulted in development of educational tools, such as workshops and forest practices reference materials, for use by landowners, loggers, and others involved in forest practices activities. For example, officials from the Montana Logging Association indicated they work closely with DNRC to host workshops to educate timber operators and landowners regarding BMPs and associated forest practices laws. DNRC also coordinates activities of the BMP Technical Working Group, made up of representatives of federal and state land management agencies, the timber industry, and private land owners, and environmental and conservation group representatives. The purpose of this working

Chapter III – Forest Practices Components

group is to review BMPs and evaluate needed changes to improve forest practices activities. It also helps develop and strengthen partnerships between the various stakeholders and provides ongoing communication. In addition, DNRC distributes information to and educates property owners and timber operators prior to conducting forest practices. This is accomplished through distributing information regarding BMPs, streamside management zones (SMZ) and slash requirements, on-site consultations with property owners, and performing inspections of timber harvest operations. The various stakeholders like and approve of the partnership and educational approach.

Conclusion: On-site Inspections of Forest Practices and Landowner Consultations Help Compliance With BMPs.

Another important component in promoting proper forest practices is on-site inspections of forest practice activities. Inspections provide an opportunity for DNRC staff to evaluate compliance with forest practices laws and assess the extent BMPs were applied. DNRC has a process to inspect timber harvests on private and state land to evaluate whether the practices were conducted appropriately. Inspections of timber harvests on federal land are generally the responsibility of federal land managers.

Any party planning a timber harvest on private land must generally enter into a Hazard Reduction Agreement (HRA) with DNRC. Using the HRA, DNRC Service Foresters assess risk of forest practices activities to forest resources and inspect those activities deemed to be the highest risk areas. Examples of areas that may be considered when evaluating the risk of forest practices activities include size of harvest (board feet and acres), slash treatment methods, steepness of slope, road construction, and location to or harvest within an SMZ. Sites will also be inspected if a report is received indicating forest practices are not being done appropriately. Over the last three years, DNRC documentation indicates Service Foresters conducted 421 BMP and SMZ inspections on private industrial forest lands and NIPF lands.

In addition to on-site inspections of timber sales, DNRC also performs on-site consultations with property owners to help them

Chapter III – Forest Practices Components

develop forest stewardship plans on how to best manage forest resources on their property. This includes educating landowners about forest practices laws and BMPs and how they can be incorporated into forest stewardship plans for their property. DNRC staff performs over 200 on-site consultations with private landowners each year. On-site inspections and consultations help landowners comply with BMPs.

Conclusion: BMP Audits are an Essential Component for DNRC to Evaluate if Forest Practices were Conducted Responsibly

DNRC uses a BMP audit process to evaluate the extent voluntary BMPs are applied during forest practices. This process is used to determine if BMPs are effective in limiting non-point sources of water pollution from timber harvest operations. Non-Point sources of pollution are the introduction of impurities (sediment, chemicals, heavy metals, etc.) into a surface water body or aquifer and are generally associated with rainfall or snowmelt. The BMP audit process also evaluates compliance with the SMZ Law. Since 1990, BMP audits have been an essential component and monitoring mechanism in evaluating forest practices and their effectiveness in protecting forest resources on all landownership types. BMP audit results are also an indication of whether DNRC's other forest practices controls, specifically stakeholder partnerships, educational activities, and on-site inspections, are working. Interviews with various stakeholders suggest BMP audits act as a deterrent to improper forest practices when timber operators know there is some likelihood a timber sale could be audited.

Every two years, the BMP audit process examines 40 to 45 randomly selected timber harvest sites across the state that meet specific selection criteria. Timber harvests selected for audit include sites from each major landownership group: federal land, state trust land, timber industry land, and NIPF land. Three BMP audit teams evaluate timber harvests around the state. Audit team members include representatives from state and federal land management agencies, the timber industry, private land ownership and environmental/conservation groups. To be a fair and effective tool in monitoring forest practices, methodologies used to conduct BMP audits should be the same among all selected sites and all land

Chapter III – Forest Practices Components

ownership groups. To accomplish this, DNRC provides training to BMP audit team members to develop consistent audit methods between audit teams and to ensure audits are thoroughly conducted. Training sessions include both classroom instruction and in-the-field training. Our observations of the BMP audit process found the work is detailed and consistent on a statewide basis.

Audit results are used to modify forestry BMPs to improve how forest practices are conducted. For example, BMP audits completed in 2004 resulted in DNRC and the BMP Technical Working Group clarifying BMP language regarding hazardous material storage and spill cleanup. In addition, the 2006 BMP audit teams began testing draft BMP language related to “fish passage” at stream crossings (i.e. culverts) in forest road systems. The goal of this language is to develop BMPs for culvert installation to ensure they are installed to provide for fish passage regardless of fish size, species, or water levels. DNRC and the BMP Technical Working Group continue to work on this issue in an effort to finalize fish passage BMP language. BMP audit results are also generally discussed with individual landowners, timber sale administrators, and timber operators. If observations identify more appropriate ways to conduct forest practices, audit teams use this as an opportunity to further educate landowners by discussing these issues with them.

Conclusion: Voluntary BMPs are Used a High Percentage of Time Near Water

The majority of on-the-ground forest practices activities, such as road design and building, timber harvest operations, and stream crossings are administered using voluntary BMPs. But how often are these voluntary practices used and are they effective in protecting water, soil, and other forest resources? Audit work found BMPs are applied during forest practices occurring near water most of the time across all landownerships. In addition, the percentage of forest practices where BMPs are applied has increased since 1990. For example, 78 percent of forest practices met or exceeded BMPs in 1990. In 2006, however, the percentage of forest practices meeting or exceeding BMPs increased to 96 percent. Additionally, DNRC’s BMP audits indicate whether correct application of BMPs during forest practices was effective in protecting water from non-point

Chapter III – Forest Practices Components

sources of pollution. These audits help evaluate BMPs such as building erosion control features into forest roads, routing road drainage through filtration zones, and stabilizing erodible soils to prevent them from entering water sources. The following table illustrates the application and effectiveness of BMPs since their implementation on state, federal and private land.

Table 1
Application and Effectiveness of BMPs
BMP Audit Result Summary

BMP Category	Year								
	1990	1992	1994	1996	1998	2000	2002	2004	2006
Forest practices applied meeting or exceeding BMP requirements	78%	87%	91%	92%	94%	96%	96%	97%	96%
Forest practices providing adequate protection	80%	90%	93%	94%	96%	98%	97%	99%	97%

Source: Compiled by the Legislative Audit Division from DNRC records.

As the table shows, DNRC's BMP audits indicate the percentage of time BMPs are applied during forest practices has increased since they were first evaluated in 1990. These percentages have remained relatively stable over the last four audit cycles. BMP audits noted similar percentages in the application and effectiveness of applying SMZ statutory requirements during forest practices. For example, in 2006, BMP audits found SMZ requirements were applied on 98 percent of the forest practices reviewed.

Use of BMPs to Protect Water is Part of Forest Practices Culture

DNRC officials and other stakeholders attribute these high percentages to efforts to educate landowners, operators and the general public on BMPs as well as stakeholder partnerships. They indicate these efforts developed a mindset that BMPs are a critical component of forest practices. For example, interviews with DNRC officials and timber industry representatives indicate logging contracts often include requirements to follow BMPs on timber sales. In addition, some timber industry officials stated employee salary

Chapter III – Forest Practices Components

packages or bonuses are often tied to their success in applying BMPs on timber sales and BMP audits are used to measure this success. Several Montana mills also require purchased timber products be certified using harvesting methods to protect forest resources by meeting national forestry standards and performance measures related to continued growth and harvesting of trees. Our audit work determined conducting forest practices using BMPs to protect water resources has become part of the culture of conducting forest practices in Montana.

How Do Montana's Forest Practices Compare with Other States?

Montana's forest practices regulatory structure relies upon a mostly voluntary process for applying BMPs during forest practices activities. However, several states have more detailed statutory requirements on how to conduct forest practices. For example, forest practices in the states of Washington and Idaho are regulated by Forest Practices Acts mandating certain practices be followed during timber harvests and corresponding road construction. Idaho's forest practices requirements for road construction, for example, require specific culvert sizes be used when roads cross streams of certain sizes. While Montana's BMPs address similar issues, they are generally broader in nature to allow for flexibility during forest practices. For example, Montana's BMPs and "310 permits" address stream crossings but indicate culvert size should correspond to stream size. According to timber industry representatives and DNRC officials, timber company policies or logging contracts may address specific requirements based on a case-by-case situation or the geographic area where forest practices occur.

Do States with Specific Forest Practices Laws and Regulations Have Better Forest Practices Track Records in Protecting Water Resources?

Audit interviews indicated forest practices are not going to be conducted properly 100 percent of the time – whether they are voluntary or statutory. We conducted audit work to determine if states with statutory forest practices requirements had better track records of protecting forest water resources than Montana. Idaho and Washington conduct audits similar to the BMP audits administered by DNRC. Our review of recently completed audits and interviews with state officials for both states found compliance rates for forest practices conducted near water were similar to Montana. As an

Chapter III – Forest Practices Components

example, Idaho’s recent “water quality audit” of forest practices activities found an overall compliance rate of approximately 98 percent for activities related to road construction, timber harvest, and chemical use. This compares to timber sales in Montana applying voluntary BMPs correctly approximately 96 percent of the time in 2006. Officials from Washington indicated compliance rates in that state are similar.

Conclusion: Montana’s Administration of Forest Practices Achieves Similar Results In Protecting Water Resources

Montana’s current process of regulating forest practices, via a mostly voluntary process, appears to be achieving similar results in protecting water resources as states using a more regulation-oriented structure. As noted earlier, DNRC’s efforts of developing partnerships and educating the public on proper forest practices has generally resulted in BMPs being applied during forest practices. Our audit work did not find any evidence establishing additional statutory requirements, such as a Forest Practices Act, would be any more effective than the administrative structure currently in place. Based on audit work conducted, we found Montana’s current process to administer forest practices achieves similar results as those in states with more emphasis on regulation.

Chapter IV –Strengthening the BMP Audit Process

Introduction

An important component used by the Department of Natural Resources and Conservation (DNRC) to evaluate forest practices is through biennial best management practices (BMP) audits. These audits help DNRC to evaluate if BMPs are applied and effective during forest practices. During our audit work, we noted an improvement could be made to strengthen the BMP audit process. This chapter discusses this issue and our recommendation for improvement.

BMP Audits Mainly Focus on Forest Practices Near Streams

DNRC uses site selection criteria to randomly select 40 to 45 timber harvest sites for BMP audits. Sites are selected using timber sale information maintained by DNRC and federal land management agencies. “High-risk sites” are selected to determine the extent forestry BMPs are applied during logging operations. Various selection criteria are used to consider timber harvest sites for a potential audit. These harvest sites are placed into a selection pool and randomly selected by DNRC staff for an audit. Selection criteria currently include timber harvest operations having occurred three years prior to the audit period, harvest units being five acres or greater, and timber harvest removal being approximately 5,000 board feet for timber harvests in western Montana and 3,000 board feet for timber harvests in eastern Montana. However, one of the major criteria in selecting high-risk sites is the distance a timber sale is from a stream. To be considered for a BMP audit, any portion of a timber sale must be located within 200 feet of a stream.

Timber harvests done close to streams and other water sources are considered high-risk due to the potential for non-point sources of pollution entering streams from timber harvest activities. In 1987, the federal Clean Water Act was amended to ensure states develop plans to protect water from non-point sources of pollution. At that time, House Joint Resolution (HJR) 49 recommended BMPs be developed to protect water from non-point sources of pollution and an audit process be used to determine timber harvest activities were applying established BMPs. Evaluating whether BMPs were applied on timber

Chapter IV – Strengthening the BMP Audit Process

harvests located near streams has generally been the focus of the BMP audit process for approximately 20 years. While an important component of the process, we found the department's current selection criteria does not consider other high-risk factors related to forest practices.

Current Process Does Not Include All High-Risk Factors in DNRC's BMP Audit Selection Pool

Some BMP audit team members expressed concerns with the current practice of using timber harvest proximity to water as the main selection criteria for potential BMP audits. They believe this increases the potential for harvests not located near water to not always apply BMPs because there is no chance of the site being audited. Audit team members believe other factors, such as road construction, soil makeup, etc., should also be considered when selecting potential audit sites. Audit team members indicated although the actual harvest may not be near water, other forest practices (such as road construction) associated with the harvest can occur near water but are not considered during the audit selection process.

Potential High-Risk Sites Not Considered for BMP Audits

Potential high-risk timber harvests are often not reviewed during the BMP audit process. Using other high-risk factors identified by BMP audit teams as criteria, we identified examples where high-risk timber sales were not included in the BMP audit selection pool because a portion of the timber sale was not within 200 feet of water. In one example, a road constructed for a timber sale had over 100 stream crossings. However, this timber harvest did not qualify to be selected for a BMP audit because the actual harvest site was not within 200 feet of water. Audit interviews and other documentation demonstrate road surface drainage, culvert installation, and stream crossings consistently have the highest departures from BMPs and are some of the highest potential sources of non-point water pollution. However, road construction, stream crossings, and other forest practices on this timber sale could not be considered as a BMP audit site.

Information from DNRC indicates there are several factors, in addition to proximity to water, which should be considered when

Chapter IV – Strengthening the BMP Audit Process

determining the risk of forest practices to forest resources. For example, the type of soil in an area, topography, logging method and equipment used can all increase the risk of damage to forest resources. DNRC officials identified a timber harvest that was not near a water source but extensive damage occurred to forest soils in the area. However, because the site was not located near a water source it cannot be included in DNRC's BMP audit pool. According to DNRC officials, logging practices on this harvest site were unacceptable and BMPs were not properly applied. The following figure illustrates the improper practices.

Figure 1

Example of Improper Forest Practices



Source: Compiled by the Legislative Audit Division from DNRC records.

Chapter IV – Strengthening the BMP Audit Process

As illustrated in the figure, poor forest practices, including poorly placed skid trails and soil compaction resulted in fairly extensive soil damage. DNRC officials also indicated the area is at risk of soil erosion during spring runoff or during rainstorms. This could impact the area's ability to reforest itself or potentially impact water located in the area. DNRC identified this timber harvest area while conducting aerial fire patrols. Once discovered, the department contacted the party responsible for the timber harvest and efforts to mitigate the damage were taken.

BMP Audit Selection Criteria Should Be Expanded

HJR 49 recommended Montana develop plans to protect water quality from non-point sources of pollution during forest practices and our audit work found controls established by DNRC accomplish this. However, HJR 49 also acknowledged the impacts improper forest practices not located near streams can have on entire forest watersheds, through soil erosion and sediment entering ground water. State law requires all forest resources be protected, not just water resources. Section 76-13-101, MCA, provides for “the protection and conservation of forest resources, range, and water; the regulation of streamflow; and the prevention of soil erosion.” The Sustainable Forestry Initiative (SFI) sets national forestry standards to ensure forests are managed in healthy and sustainable ways. SFI identifies a number of objectives and performance measures developed by professional foresters, conservationists and scientists, and others that combine the need for growing and harvesting of trees with the long-term protection of wildlife, plants, soil, and water quality. SFI also sets performance measures for management practices to maintain forest and soil productivity. SFI recommends forest practices meet or exceed federal and state laws and local BMPs for forest practices.

Some Forest Practices Not Targeted with Current Process

The current BMP audit process does not provide a broad enough perspective of forest practices to ensure BMPs are applied in all appropriate cases. DNRC officials and timber industry representatives indicate different criteria needs to be used to provide a broader perspective of forest practices activities – not just those within 200 feet of a water source. The Montana Logging Association

Chapter IV – Strengthening the BMP Audit Process

(MLA) indicated BMP audits are a useful tool but need to be expanded beyond the current selection criteria of forest practices being near water. BMP audits show the industry has high compliance rates on timber harvest sites located near water, but the MLA stated there is no information on how the industry is performing on other timber harvests. To be more useful to the industry, the MLA suggests BMP audits be expanded to review forest practices on a forest-wide basis.

Changing Conditions Dictate Need for New Selection Criteria

The current criteria used to select timber harvest sites has generally been the same since 1989. At the same time, the timber industry in the state has undergone various changes. For example, DNRC officials indicate there is less timber harvest occurring near streams and other bodies of water. These factors make it more difficult to obtain a sufficient number of timber harvests to audit because fewer sites qualify using the current selection criteria. Timber salvage operations conducted in areas where wildfires occurred create new challenges for forest practices that did not exist twenty years ago. For example, questions exist on whether current BMPs are sufficient for protecting water, soil, etc. in these areas due to a lack of vegetation and other damages caused by fire. Foresters and timber industry representatives believe timber salvage in wildfire areas may become a larger part of Montana's forest practices operations. They state BMP audits of timber salvage harvests could help determine if existing BMPs need to be revised for activities conducted in areas where wildfires occurred.

BMP Audit Selection Criteria should be Expanded

Criteria to select timber harvests for BMP audits should be updated so the process examines a broader range of sites to determine the extent BMPs are being applied. This would help DNRC identify areas where additional education may be needed and ensure forest practices are done appropriately on a larger range of timber harvests. For the last few years, BMP audit selection criteria and whether to update them has been a subject of ongoing discussion between DNRC and the BMP Technical Working Group. However, they have never been able to reach consensus on whether selection criteria should be changed or expanded. The criteria can continue to use

Chapter IV – Strengthening the BMP Audit Process

proximity to water sources as one of the selection criteria. However, other criteria could prove useful in assessing the potential risk of forest practices including topography of the area, consistency of soil and potential for soil erosion, harvest in wildfire areas and logging methods used. DNRC could use a stratified sample method to select an appropriate number of sites within each high-risk category. This would help the department select forest practices sites based on the proportion of activity meeting each high-risk category.

DNRC officials and others involved in forest practices stand behind the BMP audit process and believe unequivocally if BMP's are applied correctly they are effective in protecting forest resources. However, DNRC officials indicate the current BMP audit process only allows them to report on BMP compliance rates for forest practices occurring near streams. DNRC and the BMP Technical Working Group should work to expand BMP selection criteria and use these criteria to select timber harvest sites for the 2008 BMP audit cycle.

Recommendation #1

We recommend DNRC, in conjunction with the BMP Technical Working Group, expand BMP audit selection criteria prior to the 2008 BMP audit cycle to audit/monitor a broader spectrum of timber harvest sites.

Appendix A – Administration and Evolution of Forest Practices in Montana

The Department of Natural Resources and Conservation

The Department of Natural Resources and Conservation's (DNRC) mission is "to help ensure Montana's land and water resources provide benefits for present and future generations." DNRC's Forestry Division, headquartered in Missoula, is responsible for protecting the state's forests from wildfire, providing forestry assistance, and regulating forest practices and wildfire hazards created by logging or other forest management activities on private land. To carry out the division's duties, the state is divided into six area land offices located in Kalispell, Missoula, Helena, Lewistown, Billings, and Miles City. Each land office is under the supervision of an Area Land Manager. Unit offices within the designated boundaries of the area land offices conduct day-to-day field activities related to DNRC's forestry responsibilities.

Forestry Assistance Bureau Administers the Forest Practices Program

The Forestry Assistance Bureau is located within DNRC's Forestry Division and administers several forestry programs. These include:

- ▶ Forest Practices - Administers Montana's forest practices laws, rules, and forest water quality best management practices.
- ▶ Forest Stewardship - Promotes forest stewardship by assisting non-industrial private forest (NIPF) landowners in acquiring personal knowledge about their forest resources and developing and implementing a forest management plan for their property.
- ▶ Urban Forestry - Provides Montana's urban communities with assistance in establishing and maintaining urban forestry programs.
- ▶ Conservation Seedling Nursery - Produces and distributes seedlings for conservation plantings to private landowners, state, federal and tribal landowners, and other conservation organizations.
- ▶ Forest Pest Management - Provides assistance to NIPF landowners and others in the identification and management of forest insects and diseases.
- ▶ Biomass Utilization – Promotes the use of forest biomass as an energy source for heating schools and other public facilities. Also known as the Fuels for Schools Program.

According to DNRC officials, the Forest Practices and Forest Stewardship programs conduct activities directly related to the promotion of proper forest practices. These programs are responsible

Appendix A – Administration and Evolution of Forest Practices in Montana

for administering laws related to Streamside Management Zones (SMZ), fire hazard (i.e. slash) reduction, and forestry best management practices (BMP). Both programs provide forest practices assistance to timber companies, private loggers, and other government agencies. The Forest Stewardship Program promotes proper land management for private forests which generally includes educating landowners regarding statutory requirements and use of BMPs in forest management.

Forest Practices Funding and FTE

Forest practices funding includes a combination of State General Fund, State Special Revenue, and a federal grant. The following table provides funding information for the Forestry Assistance Bureau related to forest practice administration for fiscal years 2005 through 2007.

Appendix A – Administration and Evolution of Forest Practices in Montana

Table 2
Forest Practices Funding
Fiscal Years 2005-2007

Fiscal Year	Forest Practices Responsibility	General Fund	State Special Revenue	Federal Grants	Total Funding
2005	Forest Practices	\$556,643	\$0	\$0	\$556,643
	Slash Reduction	\$185,491	\$108,297	\$0	\$293,788
	Forest Stewardship	\$0	\$0	\$107,000	\$107,000
	Total	\$742,134	\$108,297	\$107,000	\$957,431
2006	Forest Practices	\$513,861	\$0	\$0	\$513,861
	Slash Reduction	\$204,385	\$139,035	\$0	\$343,420
	Forest Stewardship	\$29,600	\$0	\$159,729	\$189,329
	Total	\$747,846	\$139,035	\$159,729	\$1,046,610
2007	Forest Practices	\$544,604	\$0	\$0	\$544,604
	Slash Reduction	\$204,443	\$139,069	\$0	\$343,512
	Forest Stewardship	\$29,910	\$0	\$119,672	\$149,582
	Total	\$778,957	\$139,069	\$119,672	\$1,037,698

Source: Compiled by the Legislative Audit Division from DNRC records.

As the table shows, the majority of funding for forest practices comes from the General Fund. State Special Revenue funding for forest practices has two sources. First, a \$25 administrative fee is collected when the department is notified of the intent to cut timber from private forests and is used to fund general program operations. The department also collects a fee of 60 cents for every 1,000 board feet of timber harvested (up to 500,000 board feet) to help fund slash reduction inspections on timber sales. Federal grant money comes from a Federal Forest Stewardship grant funded through the United States Forest Service State and Private Forestry Program. According to DNRC officials, congress proposed to cut this grant program by approximately 40 percent for the federal fiscal year 2008 budget.

The bureau has 17.35 FTE. Three FTE are located in the Missoula bureau headquarters and include a Bureau Chief, a Forest

Appendix A – Administration and Evolution of Forest Practices in Montana

Stewardship Program Specialist, and an Accounting Technician. The remaining 14.35 FTE are distributed throughout DNRC's six area land offices and unit offices. The majority of these staff (11.80 FTE) are Service Foresters who administer DNRC's forest practices responsibilities in the field. Service Forester duties include educating landowners and loggers on appropriate forest practices, conducting on-site inspections of timber sales, and providing forestry and land management advice to landowners to help them properly manage their forest lands. The remaining 2.55 FTE are DNRC field managers and administrative staff (2.40 FTE) located in area land and unit offices and a portion of a wildland fire position (.15 FTE) which assists in slash inspections.

The Clean Water Act Changed Forest Practices

The 1970's saw several unsuccessful efforts to enact forest practices legislation in Montana related to timber harvesting, road construction, disposal of logging slash, and reforestation. However, in 1987 the U.S. Congress amended the federal Clean Water Act to address non-point sources of pollution and directed states to develop and implement methods to control non-point sources of pollution. This amendment to the Clean Water Act began a process in Montana to develop plans to address non-point sources of pollution occurring during forest practices. Non-point sources of pollution are defined as the introduction of impurities (sediment, chemicals, heavy metals, etc.) into a stream or an aquifer and are generally associated with rainfall or snowmelt. Non-point sources of pollution enter water sources at several different points, as opposed to a single point such as a discharge pipe, and can negatively impact water quality or damage fish and wildlife habitat.

In response to the amendments to the Clean Water Act, the 1987 Montana Legislature passed House Joint Resolution (HJR) 49. HJR 49 directed the Environmental Quality Council (EQC) to study how forest practices in Montana affected watersheds and determine how watersheds could best be protected from non-point sources of pollution during timber harvest operations. EQC appointed two technical committees consisting of foresters, timber industry representatives, Montana University System staff, and environmental

Appendix A – Administration and Evolution of Forest Practices in Montana

and conservation groups. A Watershed Technical Committee studied the effects of forest practices on Montana's watershed. A BMP Technical Committee was charged with developing a consensus set of forestry BMPs related to forest practices.

House Joint Resolution 49 Studies Led to Montana's Current Forest Practices Framework

Officials with Montana's EQC indicated Montana historically was unable to enact forest practices legislation which set state standards for timber harvests, forest road construction, etc. As a result, the current regulatory framework for forest practices in Montana evolved through political compromises between the timber industry, environmental interests, and government representatives.

The studies resulting from passage of HJR 49 established the basic framework for how forest practices are currently conducted in Montana. These studies recommended DNRC (then called the Department of State Lands) be the lead agency in promoting and monitoring forest practices activities. It also established an interdisciplinary working group known as the BMP Technical Working Group. This group consists of representatives from the timber industry, the environmental community, federal and state natural resource agencies, and private forest ownership. The BMP Technical Working Group developed Montana's first statewide forestry best management practices in 1987 and has overseen periodic BMP revisions since then. Forestry BMPs are timber harvesting guidelines and techniques that, when used properly, can help eliminate or reduce non-point sources of water pollution from timber harvesting operations. Current BMPs address a number of different areas related to forest practices including roads (road design, location, construction, drainage, etc.), timber harvest activities and slash treatment, stream crossings, and use and storage of hazardous substances.

HJR 49 also suggested a biennial BMP audit process be used to evaluate forest practices and determine whether BMPs are properly applied and effective in limiting non-point sources of pollution. This audit process is administered through the efforts of both DNRC and the BMP Technical Working Group. The first statewide BMP audit

Appendix A – Administration and Evolution of Forest Practices in Montana

was completed in 1990 and has been completed every two years since. The most recent BMP audit was completed in the summer of 2006. Presently, three audit teams are used (northwestern Montana, western Montana and central/eastern Montana) to evaluate harvest sites in their area of the state. All stakeholders interested in forest practices are provided an opportunity to participate in the BMP audit process. This includes representatives of state and federal land management agencies, the timber industry, private land ownership, and environmental/conservation organizations. For sites selected, audit teams evaluate all aspects of forest practices including road design and construction, methods of timber harvest used, slash treatment, and harvest activities within the SMZ. Forest practices conducted on state lands, federal lands, timber industry lands, and non-industry private forest lands are audited.

Department Response

DEPARTMENT OF NATURAL RESOURCES
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Legislative Audit Division
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RE: DNRC Forest Practices Performance Audit

Dear Mr. Seacat:

The Department of Natural Resources and Conservation (DNRC) has reviewed the June 2007 performance audit regarding promoting proper forest practices. Our response to the recommendation is below.

Recommendation

We recommend DNRC, in conjunction with the BMP Technical Working Group, expand BMP audit selection criteria prior to the 2008 BMP audit cycle to audit/monitor a broader spectrum of timber harvest sites.

Response

The Department partially concurs with this recommendation. The Department will work through the BMP Working Group in FY2008 to expand BMP site selection criteria to ensure a broader spectrum of timber harvest sites are being audited for BMP application and effectiveness. Based on the LAD report site selection criteria related to harvest unit adjacency to streams will be specifically considered, along with additional criteria such as audits conducted on active harvest sites and during non-summer seasons. The Department recognizes that expanding site selection criteria may result in increased workload for agency and industrial land managers, as well as put additional pressure on the volunteer BMP audit team membership.

The Department does not concur with the timeframe for implementing the corrective actions for this recommendation. We would prefer modifying the timeframe to implement the changes prior to the 2010 BMP audit cycle rather

than the upcoming 2008 cycle, as specified in the recommendation. The existing DNRC and BMP Audit Team process allows a one audit cycle adjustment period when significant changes to BMPs or the BMP audit process occur.

We appreciate the professionalism demonstrated by your staff that participated in the audit. Thank you again for the opportunity to review the audit report and respond to the recommendation.

Sincerely,



Mary Sexton
Director